

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A packet relay device comprising:

a join request unit operable to transmit a join request to a second relay device to join a multicast group in response to receiving a join instruction to join the multicast group, the join instruction transmitted by a mobile node at least before the mobile node moves between subnetworks; and

a packet forwarding unit operable to forward subsequently received multicast packets for the multicast group for a specified time period to a care-of address in response to the packet relay device receiving location registration information containing the care-of address of the mobile node in a the foreign subnetwork to which the mobile node has moved, the location registration information transmitted when the mobile node has moved between subnetworks, wherein the packet forwarding unit does not forward the multicast packets after expiration of the specified period of time.

2. (currently amended) The packet relay device according to claim 1, wherein the packet forwarding means unit is further operable to stop forwarding of the multicast packets in response to receiving a forwarding stop instruction transmitted by the mobile node.

3. (currently amended) The packet relay device according to claim 1, wherein the packet forwarding means unit is further operable to determine a forwarding time period for forwarding the multicast packets based on time period designation information received

by the forwarding unit from in response to receiving the time period designation information indicating a specified time period, the time period designation information transmitted by the mobile node.

4. (currently amended) A mobile node comprising:

a join instruction unit operable to transmit join instructions to join a multicast group to a location registrar relay device, the location registrar relay device being the recipient of location registration information containing the mobile node's one's own care-of address, at least before the mobile node moves between subnetworks, and

a forwarding request unit operable to transmit a forwarding request to the location registrar relay device, in response to the mobile node moving between subnetworks while participating in the multicast group, whereby multicast packets for the multicast group are subsequently received by the location registrar relay device ~~to be~~ and forwarded for a specified time period to a care-of address of the mobile node after the move, and wherein the packet forwarding unit does not forward the multicast packets to the care-of address of the mobile node after expiration of the specified period of time.

5. (original) The mobile node according to claim 4, wherein the join instruction unit is further operable to:

transmit a join request to join the multicast group to a relay device in a subnetwork to which the mobile node is attached when the mobile node newly joins a multicast group; and

transmit a join instruction to join the multicast group to the location registrar relay device.

6. (original) The mobile node according to claim 4, further comprising a forwarding stop instruction unit operable to transmit to the location registrar relay device a forwarding stop instruction to stop forwarding of multicast packets by the location registrar relay device once multicast packets are received from a multicast group based on a join request after transmitting the join request to join the multicast group.

7. (currently amended) A mobile node according to claim 4, further comprising a time period designation unit operable to transmit information indicating a specified period of time as the specified time period to the location registrar relay device when a subnetwork to which the mobile node has moved has a multicast packet delivery function; and

transmit information indicating that forwarding should be continued for as the specified time period to the location registrar relay device when the subnetwork to which the mobile node has moved has no multicast packet delivery function.

8. (currently amended) A packet forwarding method comprising the steps of:

notifying a home agent for a mobile node that receives multicast packets whether a foreign subnetwork to which the mobile node has moved is a multicast protocol compatible subnetwork;

allowing the encapsulation and forwarding ~~encapsulating and forwarding~~, at the home agent, the of multicast packets to a care-of address of the mobile node for a

specified limited time period and preventing the encapsulation and forwarding, at the home agent, the multicast packets to a care-of address of the mobile node after expiration of the specified period of time if, based on content of the notification, the foreign subnetwork to which the mobile node has moved is a multicast protocol compatible subnetwork; and

allowing the encapsulation and forwarding encapsulating and forwarding, at the home agent, the multicast packets to the care-of address regardless of the specified time period if the foreign subnetwork is not a multicast protocol compatible subnetwork.

9. (original) The packet forwarding method according to claim 8, further comprising the step of:

including information indicating whether the foreign subnetwork is multicast protocol compatible in a location registration message.

10. (original) The packet forwarding method according to claim 8, further comprising the step of:

statically determining, at the home agent, the time period for performing encapsulated forwarding.

11. (original) The packet forwarding method according to claim 8, further comprising the step of:

indicating to the home agent, from the mobile node, that the time period that the home agent forwards multicast packets to the mobile node.

12. (currently amended) A packet forwarding method comprising the steps of:

notifying a relay device to which a mobile node that receives multicast packets was connected in a subnetwork that the mobile node is moving from as to whether a foreign subnetwork to which the mobile node is moving is a multicast protocol compatible subnetwork;

allowing the encapsulation and forwarding encapsulating and forwarding, at the home agent, the ~~of~~ multicast packets to a care-of address of the mobile node for a specified limited time period and preventing the encapsulation and forwarding, at the home agent, the multicast packets to a care-of address of the mobile node after expiration of the specified period of time if, based on content of the notification, the foreign subnetwork to which the mobile node has moved is a multicast protocol compatible subnetwork; and

encapsulating and forwarding, at the relay device, the multicast packets to the care-of address regardless of the specified time period if the foreign subnetwork to which the mobile node has moved is not a multicast protocol compatible subnetwork.

13. (original) The packet forwarding method according to claim 12, further comprising the step of:

including information indicating whether the foreign subnetwork is multicast protocol compatible in a location registration message.

14. (currently amended) A home agent comprising:

a binding cache operable to manage foreign locations of mobile nodes to be managed;

a multicast packet forwarding processing unit operable to forward multicast packets; and

a packet processing unit operable to perform encapsulated forwarding of multicast packets for a specified time period when multicast packets can be received at a foreign location of a mobile node, to not perform encapsulated forwarding of multicast packets after the expiration of the specified time period when multicast packets can be received at a foreign location of a mobile node and to perform encapsulated forwarding of multicast packets for a time regardless of the specified time period when multicast packets cannot be received at a foreign location of a mobile node.